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October 29, 2004

APPEAL BRIEF
MS Appeal Brief
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

RE: *U.S. Patent Application Serial No. 09/479, 852*
Entitled "A METHOD FOR REQUESTING TRACE DATA REPORTS FROM FDC SEMICONDUCTOR FABRICATION PROCESSES"
Inventor(s): ELFIDO CROSS, ET AL
Client's Reference: TT3263

Sir:

Transmitted herewith for filing are:

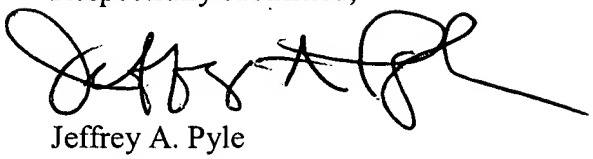
1. An Appeal Brief (an original and two copies); and
2. A return postcard to acknowledge receipt of these materials. Please date stamp and mail this postcard.

The Assistant Commissioner is authorized to deduct the amount of the total filing fee of $320 from Advanced Micro Devices, Inc. Deposit Account No. 01-0365/TT3263.

Should any additional fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason relating to the enclosed materials, or should an overpayment be included herein, the Director is authorized to deduct or credit said fees from Advanced Micro Devices, Inc. Deposit Account No. 01-0365/TT3263.

Customer No. 23720

Respectfully submitted,



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JAP/sbs

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: ELFIDO COSS, JR. *ET AL.*	Group Art Unit: 2125
Serial No.: 09/479,852	Examiner: WALTER R. SWINDELL
Filed: 1/7/2000	Atty. Dkt. No.: 2000.021100/JAP
For: A METHOD FOR REQUESTING TRACE DATA REPORTS FROM FDC SEMICONDUCTOR FABRICATION PROCESSES	Customer No. *23720*

APPEAL BRIEF

Mail Stop Appeal Brief – Patents
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CERTIFICATE OF MAILING 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: MS Appeal Briefs – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on October 29, 2004.

Suzanne Stephens

Sir:

Applicants hereby submit an original and two copies of this Appeal Brief to the Board of Patent Appeals and Interferences in response to the final Office Action dated March 29, 2004. The Notice of Appeal for this application was filed on August 30, 2004.

The Director is authorized to deduct the fee for filing this Appeal Brief ($340) from Advanced Micro Devices, Inc. Deposit Account No. 01-0365/TT4254. In the event the monies in that account are insufficient, the Director is authorized to withdraw funds from Williams, Morgan & Amerson, P.C. Deposit Account No. 50-0786/2000.0211000.

I. REAL PARTY IN INTEREST

Advanced Micro Devices, Inc., the assignee hereof, is the real party in interest.

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II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences of which Applicants, Applicants' legal representative, or the Assignee is aware that will directly affect or be directly affected by or have a bearing on the decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1-36 are pending in the application. The Office Action rejected each of the claims 1-36. More particularly, the Office:

- rejected claims 1-6, 23, and 25-29 as anticipated under 35 U.S.C. § 102 (b) U.S. Letters Patent 4,861,419 ("Flinchbaugh *et al.*"); and
- rejected claims 7-22, 24, and 30-36 as obvious at they time they were made under 35 U.S.C. § 103 (a)) over Flinchbaugh *et al.* in combination with U.S. Letters Patent 5,576,629 ("Turner *et al.*").

Applicants appeal each of the rejections herein.

IV. STATUS OF AMENDMENTS

There were no amendments submitted after the "final" Office Action.

V. SUMMARY OF THE INVENTION

The invention, in its various aspects, is an apparatus and a method, best shown in **FIG. 2** and **FIG. 3**, respectively, for dynamically generating trace data reports in a semiconductor fabrication process employing **f**ault **d**etection **c**ontrol ("FDC"). **FIG. 2** and **FIG. 3** are reproduced below for the convenience of the Office.

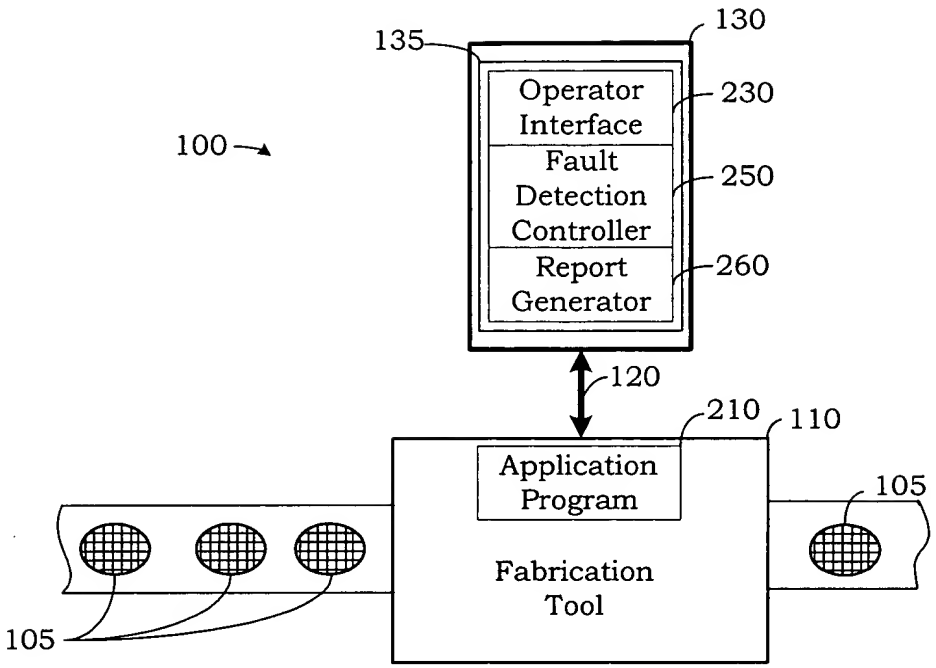
100
135
130
Operator Interface
230
Fault Detection Controller
250
Report Generator
260
120
210
110
Application Program
105
Fabrication Tool
105

Fig. 2

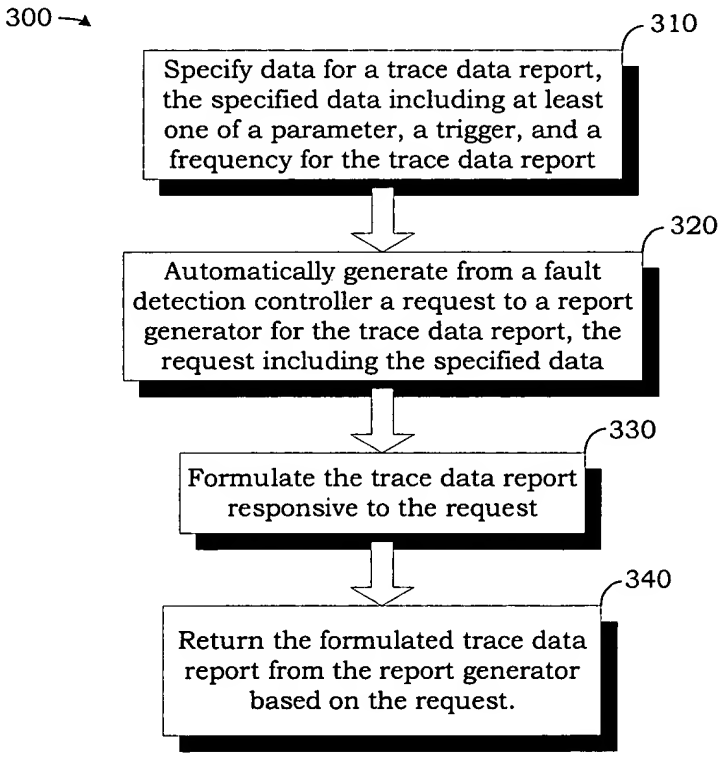
300
310
Specify data for a trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report
320
Automatically generate from a fault detection controller a request to a report generator for the trace data report, the request including the specified data
330
Formulate the trace data report responsive to the request
340
Return the formulated trace data report from the report generator based on the request.

Fig. 3

Referring now to both **FIG. 2** and **FIG. 3**, the method comprises:

- specifying (at 310) data for a trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report;
- automatically generating (at 320) from a fault detection controller 250 a request to a report generator 260 for the trace data report, the request including the specified data;
- formulating (at 330) the trace data report responsive to the request; and
- returning (at 340) the formulated trace data report from the report generator 260 based on the request.

In other aspects, the invention comprises a computer (130) programmed to perform this method and a computer-readable, program storage medium (135) encoded with instructions that perform this method when executed by a computer.

The apparatus is a semiconductor fabrication processing system 100, comprising: a fabrication tool 110 capable of providing at least one of specified data and a trace data report; a fault detection controller 250 implementing a fault detection control, the fault detection controller 250 being capable of automatically generating (at 320) a request for the trace data report, the request including the specified data; a report generator 260 capable of requesting at least one of the specified data and the trace data report from the fabrication tool 110 and capable of, if the specified data is requested from the fabrication tool 110, providing the trace data report; and an operator interface 230 for receiving data specified for the trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report, and to which the trace data report may be returned from at least one of the report generator 260 and the fabrication tool 110.

VI. ISSUES ON APPEAL

A. Whether U.S. Letters Patent 4,861,419 ("Flinchbaugh *et al.*") anticipates claims 1-6, 23, and 25-29 under 35 U.S.C. § 102 (b).

B. U.S. Letters Patent 4,861,419 ("Flinchbaugh *et al.*") in combination with U.S. Letters Patent 5,576,629 ("Turner *et al.*") render obvious, at the time the invention was made, claims 7-22, 24, and 30-36 under 35 U.S.C. § 103 (a).

VII. GROUPING OF THE CLAIMS

The claims rise and fall together.

VIII. ARGUMENT

The Office made two substantive rejections in the "final" Office Action, by rejecting:

- claims 1-7, 23, and 25-29 as anticipated under 35 U.S.C. § 102 (b) U.S. Letters Patent 4,861,419 ("Flinchbaugh, *et al.*"); and
- claims 8-22, 24, and 30-36 as obvious at they time they were made under 35 U.S.C. § 103 (a) over Flinchbaugh, *et al.* in combination with U.S. Letters Patent 5,576,629 ("Turner, *et al.*").

Applicants respectfully submit that the Office has misconstrued Flinchbaugh, *et al.* and that, when properly construed, it fails to teach the limitations of the independent claims for which it is cited. Furthermore, the construction of Flinchbaugh *et al.* on which the Office relies errs in that it employs hindsight and applies the principles of inherency improperly.

A. STATEMENT OF APPLICANTS' POSITION— THE CITED ART FAILS TO TEACH ALL THE LIMITATIONS OF THE CLAIMS

1. Flinchbaugh, *et al.* Fails to Anticipate Claims 1-7, 23, & 25-29

The Office rejected claims 1-7, 23, and 25-29 as anticipated under 35 U.S.C. § 102 (b) U.S. Letters Patent 4,861,419 ("Flinchbaugh, *et al.*"). An anticipating reference, by definition, must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d (BNA) 1566, 1567 (Fed. Cir. 1990). Office policy echoes this formulation M.P.E.P. § 2131. Each of the independent claims recites a "request"

between a fault detection controller and a report generator, which Flinchbaugh, *et al.* fails to disclosed. Accordingly, Flinchbaugh, *et al.* fails to anticipate any of claims 1-7, 23, and 25-29.

Each of the independent claims 1, 7, 15, 23, and 30 recites a "request" between a fault detection controller and a report generator or the act of "requesting" or "generating a request." (cl. 1, lines 5-6; cl. 7, lines 6-7; cl. 15, lines 6-7; cl. 23, lines 5-6; cl. 30, lines 6-7). The Office cites col. 9, lines 3-22 and col. 17, lines 49-68 of Flinchbaugh, *et al.* as disclosing this limitation. These citations are excerpted below, and fail to teach or suggest any such "request" or "requesting":

> Also shown in FIG. 1 is a digital processor or computer 40 operably connected to photodiode 36 to receive the output signal or photodiode 36. Computer 40 functions in the embodiment of the present invention, among other things, to store programs and subroutines for the system, to store the reference end point trace or traces and other data, and to analyze the actual end point trace, to compare the reference end point trace with the actual end point trace and match the actual trace to one or more reference traces using dynamic time warping (to be later described), to store information regarding comparisons of the reference end point trace with the actual end point trace including cumulative warping costs, and provide certain signals or controls to the plasma etcher or the operator of the equipment as well as other functions as desired. An output 42 from computer 40 provides signals to either the plasma etch reactor, control equipment for the plasma etch reactor, to an operator, to signal means or other means as desired.
>
> *****
>
> Additionally, the present invention can be used in a real time application to minotor [*sic*] the etch process as it actually proceeds and, either alone or in conjunction with other systems such as expert systems, to vary or correct etch parameters during the etch when abnormalities are detected.
>
> Additional advantages of the present invention include elimination of strip-chart recorders from the clean room, and the ability to edit large volumes of end point traces by saving only those that show an anomalous behavior.
>
> Another advantage is that the system functions as a process monitoring tool that complements the microprocessor-based hardware monitoring function. While the hardware monitor sets alarms and halts the processing based on hardware problems (for example, no RF power, no gas flow, incorrect pressure or other similar problems), the embodiment of the present invention can

warn the operator, and eventually shut off the etcher, based on reaction process related problems.

Flinchbaugh, *et al.* actually fails to disclose two separate functionalities (*e.g.*, fault detection controller and report generator) between which such a "request" could be transferred. Thus, Flinchbaugh, *et al.* cannot be construed to teach such a "request." Accordingly, Flinchbaugh, *et al.* does not anticipate any of claims 1-7, 23, and 25-29.

2. Flinchbaugh, *et al.*, in Combination with Turner *et al.* Fails to Render Obvious Claims 8-22, 24, & 30-36

The Office rejected claims 7-22, 24, and 30-36 as obvious at they time they were made under 35 U.S.C. § 103 (a) over Flinchbaugh, *et al.* in combination with U.S. Letters Patent 5,576,629 ("Turner, *et al.*"). As noted above, the independent claims 1, 7, 15, 23, and 30 recites a "request" between a fault detection controller and a report generator or the act of "requesting" or "generating a request." (cl. 1, lines 5-6; cl. 7, lines 6-7; cl. 15, lines 6-7; cl. 23, lines 5-6; cl. 30, lines 6-7). The rejections under 35 U.S.C. § 103 (a), rely on Flinchbaugh, *et al.*, for teaching this limitation and make no allegation that Turner, *et al.* teach it. Consequently, the obviousness rejections also fail because the combination of Flinchbaugh, *et al.* and Turner, *et al.* fail to teach such a "request." *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

B. THE OFFICE'S RESPONSE IS INSUFFICIENT

In Flinchbaugh *et al.*, the Office Action relies primarily on the relationship and function of the computer 40, photodiode 36, and EPT recorder 38 in Figure 1 in both the anticipation and obviousness rejections. In essence, the Office alleges that the computer 40 is a "fault detection controller" and the photodiode 36 and EPT recorder 38 are "report generators" from which the "fault detection controller [requests] a report generator for the trace data report". However, Applicants respectfully submit that the Office continues to misconstrue Flinchbaugh *et al.* and that the rejections are *prima facie* deficient.

1. The Office Misconstrues Flinchbaugh *et al.*

The functionality of the computer 40 is discussed quite extensively in Flinchbaugh *et al.*, most of which is cited by the Office. The functionality is summarized at col. 9, lines 3-34. However, extensive detail of the operation of the computer 40 is included in the discussion of FIG. 3 – FIG. 5, as well.

The EPT recorder 38 is discussed only at col. 8, lines 51-58, which read:

> An electrical signal corresponding to the intensity of light impacting on photodiode 36 is generated by photodiode 36 and is communicated to an end point trace recorder 38. In a typical prior art plasma etch reactor, the end point trace recorder 38 provides a paper strip-chart record of the end point trace of the etching operation conducted in the reactor.

Note that there is no indication in this passage that the EPT recorder 38 communicates in any way with the computer 40. To the extent that one wishes to identify the "strip-chart record" as a report, there is no teaching that the report ever goes to the computer 40, much less a teaching that the EPT recorder 38 communicates it to the computer 40. Nor is there any teaching that the EPT recorder 38 communicates even the data to the computer 40.

The functionality of the photodiode 36 is discussed in about three places in Flinchbaugh *et al.* The first is in the passage quoted above, in which the data it generates is transmitted to the EPT recorder 38. The second is at col. 9, at lines 2-5, where Flinchbaugh *et al.* states that the photodiode 36 is "operably connected" to the computer 40. The third mention is in connection with the graph in FIG. 2. Nothing in any of these passages supports the Office's construction of the photodiode 36 is a "report generator." The photodiode 36 generates data instead of reports, as the Office impliedly concedes in attempting to define the photodiode 36 as "...a report generator because it generates and supplies data in preparing an actual trace data [report]." Paper No. 11, Detailed Action, p. 11. The Office's position is internally contradictory. Even were this not true, the claims specify that the report contain "at least one of a parameter, a trigger, and a frequency for the trace data report", none of which the photodiode 36 generates.

2. The Office's Construction of Flinchbaugh *et al.* Is a Hindsight Reconstruction

Even were these misconstructions correct, the rejections still fail. The Office Action infers numerous limitations, including the transmission of a request between the computer 40 and the EPT recorder 38 and/or the photodiode 36, from a few isolated teachings. In particular, the Office Action cites the teaching that:

> Computer 40 functions in the embodiment of the present invention, among other things, to ...provide certain signals or controls to the plasma etcher or the operator of the equipment as well as other functions as desired.

col. 9, lines 5-18. The Office notes that the arrows in FIG. 1 indicate the computer 40 has "bi-directional communications." The Office furthermore relies on the programmed function of the computer 40 in "getting" the EPT and that it is allegedly well known to communicate through requests and responses.

Applicants respectfully submit that the inferences the Office draws from these points results purely from hindsight reconstruction. For instance, Flinchbaugh *et al.* clearly states the photodiode 36 transmits its data to both the computer 40 (col. 9, lines 3-5) and the EPT recorder 38 (col. 9, lines 52-55), but nowhere indicates that the computer 40 transmits anything to either the photodiode 36 or the EPT recorder 38. Thus, the more reasonable interpretation of the arrows in FIG. 1 is that they indicate the transmission of data from the photodiode 36 to the computer 40 and the EPT recorder. The suggestion that they indicate the transmission of a request from the computer 40 to the photodiode 36, or the EPT recorder 38 can arise only from Applicant's disclosure. This is improper, and constitutes reversible error. *In re Dembiczak*, 50 U.S.P.Q.2d (BNA) 1614, 1617-1618 (Fed. Cir. 1999).

3. Inherency Is Improperly Applied in All Rejections

The Office Action also states that "...[i]t is from these points, both explicit and inherent that the Examiner contends that Flinchbaugh et al. [*sic*] does disclose a request between a fault detection controller and a report generator." Paper No. 11, p. 7. Thus, inherent teachings are drawn from Flinchbaugh *et al.* in construing it, and this construction is relied upon in both the anticipation and the obvious rejections. Inherency works differently in anticipation and in obviousness contexts, but it is misapplied here regardless of the grounds for rejection.

Inherency is immaterial in an obviousness analysis. Inherency and obviousness are not synonymous since "[t]hat which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown." *In re Newell*, 13 U.S.P.Q.2d (BNA) 1248, 1250 (Fed Cir. 1989), quoting *In re Spormann*, 150 U.S.P.Q. (BNA) 449, 452 (C.C.P.A. 1966); *In re Rijckaert*, 28 U.S.P.Q.2d (BNA) 1955, 1957 (Fed. Cir. 1993), also quoting *Sporman*, at 452. "[O]ne cannot choose from the unknown." *In re Ochiai*, 37 U.S.P.Q.2d (BNA) 1127, 1131 (Fed. Cir. 1995), quoting *In re Mancy*, 182 U.S.P.Q. (BNA) 303, 306 (C.C.P.A. 1974). "Such a retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection." *Rijckaert*, at 1957.

Consequently, the obviousness rejections of claims 7-22, 24, and 30-36 fail because they rely on supposedly inherent teachings of Flinchbaugh *et al.* In responding to Applicants' position, the Office stated that certain limitations argued by Applicants are "inherent features of Flinchbaugh et al...." Paper No. 11, p. 7. These supposedly inherent teachings are incorporated into the obviousness rejections. Thus, to the extent the obviousness rejections are predicated on supposedly inherent teachings of Flinchbaugh *et al.*, they are improper and should be withdrawn.

Inherency in anticipation requires that the asserted proposition *necessarily* flow from the disclosure. *In re Oelrich*, 212 U.S.P.Q. (BNA) 323, 326 (C.C.P.A. 1981). "The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *Oelrich*, at 326, quoting *Hansgirg v. Kemmer*, 40 U.S.P.Q. (BNA) 665, 667 (C.C.P.A. 1939). "Inherency... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Ex parte Skinner*, 2 U.S.P.Q.2d (BNA) 1788, 1789 (Bd. Pat. App. & Int. 1987), citing *In re Oelrich*, 666 F.2d 578, 581 (C.C.P.A. 1981).

Even if the Office's construction of Flinchbaugh *et al.* were justifiable, which Applicants dispute, it is not the only supportable interpretation. As Applicants noted above, all the teachings relied on by the Office also support the more reasonable construction of Flinchbaugh *et al.* that Applicants propound. Namely, that Flinchbaugh *et al.* teaches:

- a photodiode 36 that outputs data to both the EPT recorder 38 and the computer 40;
- an EPT recorder 38 that receives the data from the photodiode 36 and prints out a "strip-chart record"; and
- a computer 40 that receives the data from the photodiode 36 and analyzes it.

Note that this construction omits several of the limitations of Applicant's claims. Nevertheless, since this construction is at least as probable as that proffered by the Office, if not more so, then the Office's construction does not "necessarily flow" from Flinchbaugh *et al.* It therefore is not "inherent" in what Flinchbaugh *et al.* teaches.

C. CONCLUSION OF THE ARGUMENT

The Office made two substantive rejections in the "final" Office Action, by rejecting:

- claims 1-7, 23, and 25-29 as anticipated under 35 U.S.C. § 102 (b) U.S. Letters Patent 4,861,419 ("Flinchbaugh, *et al.*"); and
- claims 8-22, 24, and 30-36 as obvious at they time they were made under 35 U.S.C. § 103 (a) over Flinchbaugh, *et al.* in combination with U.S. Letters Patent 5,576,629 ("Turner, *et al.*").

The anticipation rejections fail because:

- Flinchbaugh *et al.*, when properly construed, fails to teach all the limitations of the claims—namely, a "request" between a fault detection controller and a report generator or the act of "requesting" or "generating a request"; *In re Bond*, 15 U.S.P.Q.2d (BNA) 1566, 1567 (Fed. Cir. 1990); M.P.E.P. § 2131.
- they rely upon supposedly inherent teachings of Flinchbaugh *et al.* that do not meet the standards of inherency in anticipation; *In re Oelrich*, 212 U.S.P.Q. (BNA) 323, 326 (C.C.P.A. 1981).

The obviousness rejections also fail because:

- Flinchbaugh *et al.*, when properly construed, fails to teach all the limitations of the claims—namely, a "request" between a fault detection controller and a report generator or the act of "requesting" or "generating a request"; *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).
- they impermissibly rely upon a hindsight reconstruction of Flinchbaugh *et al.*; *In re Dembiczak*, 50 U.S.P.Q.2d (BNA) 1614, 1617-1618 (Fed. Cir. 1999).
- they impermissibly rely upon supposedly inherent teachings of Flinchbaugh *et al.*; *In re Newell*, 13 U.S.P.Q.2d (BNA) 1248, 1250 (Fed Cir. 1989).

Applicants therefore respectfully submit that the rejections should be overturned.

IX. CLAIMS AT ISSUE

The claims at issue are set forth in the Appendix hereto.

X. CONCLUSION

Applicants respectfully submit that the Office has misconstrued the principle reference, Flinchbaugh, *et al.*, and that, when properly construed, it fails to teach the limitations of the independent claims for which it is cited. Furthermore, the construction of Flinchbaugh *et al.* on which the Office relies errs in that it employs hindsight and applies the principles of inherency improperly. Accordingly, Flinchbaugh *et al.* fails to anticipate claims 1-7, 23, and 25-29 and in combination with Turner *et al.* fails to render obvious claims 8-22, 24, and 30-36. Applicants therefore request that the rejections be overturned and that the claims be allowed to issue.

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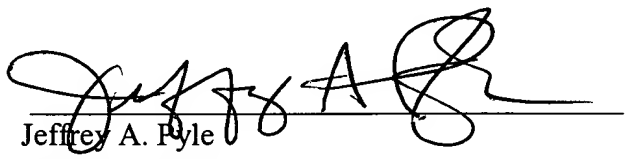
Respectfully submitted,



Date: October 29, 2004

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Attorney for Applicants

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Houston, Texas 77042
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APPENDIX

(Claims at Issue)

1. (Original) A method for dynamically generating trace data reports in a semiconductor fabrication process employing fault detection control, the method comprising:

receiving specified data for a trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report;

automatically generating from a fault detection controller a request to a report generator for the trace data report, the request including the specified data;

formulating the trace data report responsive to the request; and

returning the formulated trace data report from the report generator based on the request.

2. (Original) The method of claim 1, wherein receiving the specified data for the trace data report includes receiving the specified data by manual input.

3. (Original) The method of claim 1, wherein requesting the trace data report includes consulting a data store of available parameters.

4. (Original) The method of claim 3, wherein the data store comprises at least one of a database, a list, and a file.

5. (Original) The method of claim 3, wherein the report generator populates the data store with the available parameters.

6. (Original) The method of claim 1, wherein formulating the trace data report responsive to the request includes gathering specified data from a fabrication tool.

7. (Original) A computer programmed to perform a method for generating data reports in an advanced process control, semiconductor fabrication process, the method comprising:

receiving specified data for a trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report;

automatically generating from a fault detection controller a request to a report generator for the trace data report, the request including the specified data;

formulating the trace data report responsive to the request; and

returning the formulated trace data report from the report generator based on the request.

8. (Original) The programmed computer of claim 7, wherein receiving the specified data for the trace data report in the programmed method includes receiving the specified data by manual input.

9. (Original) The programmed computer of claim 7, wherein requesting the trace data report in the programmed method includes consulting a data store of available parameters.

10. (Previously Presented) The programmed computer of claim 9, wherein the data store comprises at least one of a database, a list, and a file.

11. (Original) The programmed computer of claim 9, wherein the report generator populates the data store with the available parameters.

12. (Original) The programmed computer of claim 7, wherein the fault detection controller and the report generator reside on a single computer.

13. (Original) The programmed computer of claim 7, wherein the fault detection controller and the report generator reside on different computers.

14. (Original) The programmed computer of claim 7, wherein formulating the trace data report responsive to the request in the programmed method includes gathering specified data from a fabrication tool.

15. (Original) A computer-readable, program storage medium encoded with instructions that, when executed by a computer, perform a method for generating data reports in an advanced process control, semiconductor fabrication process, the programmed method comprising:

receiving specified data for a trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report;

automatically generating from a fault detection controller a request to a report generator for the trace data report, the request including the specified data;

formulating the trace data report responsive to the request; and

returning the formulated trace data report from the report generator based on the request.

16. (Original) The computer-readable, program storage medium of claim 15, wherein specifying data for a trace data report in the programmed method includes receiving the specified data by manual input.

17. (Original) The computer-readable, program storage medium of claim 15, wherein requesting the trace data report in the programmed method includes consulting a data store of available parameters.

18. (Original) The computer-readable, program storage medium of claim 17, wherein the data store comprises at least one of a database, a list, and a file.

19. (Original) The computer-readable, program storage medium of claim 17, wherein the report generator populates the data store with the available parameters.

20. (Original) The computer-readable, program storage medium of claim 15, wherein the fault detection controller and the report generator reside on a single computer.

21. (Original) The computer-readable, program storage medium of claim 15, wherein the fault detection controller and the report generator reside on different computers.

22. (Original) The computer-readable, program storage medium of claim 15, wherein formulating the trace data report responsive to the request in the programmed method includes gathering specified data from a fabrication tool.

23. (Previously Presented) A semiconductor fabrication processing system, comprising:

a fabrication tool capable of providing at least one of specified data and a trace data report;

a fault detection controller implementing a fault detection control, the fault detection controller being capable of automatically generating a request for the trace data report, the request including the specified data;

a report generator capable of requesting at least one of the specified data and the trace data report from the fabrication tool and capable of, if the specified data is requested from the fabrication tool, providing the trace data report; and

an operator interface for receiving specified data for the trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report, and to which the trace data report may be returned from at least one of the report generator and the fabrication tool.

24. (Original) The semiconductor fabrication processing system of claim 23, wherein the operator interface includes a graphical user interface.

25. (Original) The semiconductor fabrication processing system of claim 23, further comprising a data store of available parameters that may be received as the specified data.

26. (Previously Presented) The semiconductor fabrication processing system of claim 25, wherein the data store comprises at least one of a database, a list, and a file.

27. (Original) The semiconductor fabrication processing system of claim 25, wherein the report generator is capable of populating the data store with the available parameters.

28. (Original) The semiconductor fabrication processing system of claim 23, wherein at least two of the fault detection controller, the operator interface, and the report generator reside on the same computer.

29. (Original) The semiconductor fabrication processing system of claim 23, wherein the fault detection controller and the report generator reside on different computers.

30. (Previously Presented) An advanced process control, semiconductor fabrication processing system, comprising:

means for fabricating a wafer, the fabricating means being capable of providing at least one of specified data and a trace data report;

means for implementing a fault detection control, the fault detection control means being capable of automatically generating a request for the trace data report, the request including the specified data;

means for generating a report, the report generating means being capable of requesting at least one of the specified data and the trace data report from the fabricating means and capable of, if the specified data is requested from the fabricating means, providing the trace data report; and

means for interfacing with an operator, through which an operator may specify the data for the trace data report, the specified data including at least one of a parameter, a trigger, and a frequency for the trace data report, and to which the trace data report may be returned from at least one of the report generating means and the fabricating means.

31. (Original) The semiconductor fabrication processing system of claim 30, wherein the interfacing means includes a graphical user interface.

32. (Previously Presented) The semiconductor fabrication processing system of claim 30, further comprising means for storing identities of available parameters that may be specified.

33. (Original) The semiconductor fabrication processing system of claim 32, wherein the storing means comprises at least one of a database, a list, and a file.

34. (Previously Presented) The semiconductor fabrication processing system of claim 32, wherein the report generating means is capable of populating the storing means with the available parameters.

35. (Previously Presented) The semiconductor fabrication processing system of claim 30, wherein at least two of the fault detection control means, the interfacing means, and the report generating means reside on the same computer.

36. The semiconductor fabrication processing system of claim 30, wherein the fault detection controller and the report generator reside on different computers.